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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/073,268	02/13/2002	Ken Hanashi	2635-96	6814
23117	7590	06/29/2004	EXAMINER	
NIXON & VANDERHYE, PC 1100 N GLEBE ROAD 8TH FLOOR ARLINGTON, VA 22201-4714				MACCHIAROLO, PETER J
ART UNIT		PAPER NUMBER		
				2879

DATE MAILED: 06/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

A

Office Action Summary	Application No.	Applicant(s)	
	10/073,268	HANASHI ET AL.	
	Examiner	Art Unit	
	Peter J Macchiarolo	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 13 May 2004.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-7 is/are pending in the application.
 - 4a) Of the above claim(s) 8-13 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-7 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 0202 0802.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

Election/Restrictions

1. Claims 8-13 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected method there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 05/13/2004.

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statements (IDS) submitted on 08/08/2002 and 02/13/2002 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the interval *d* being the radius *R* plus 1mm (claim 2), and the wear resisting member being provided over an entire periphery of the side wall of the center electrode (claim 4) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

4. Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. **Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

6. Claim 2 recites the interval d is the radius R plus 1mm. However, the Examiner notes that figure 4a shows the radius R is larger than the interval d , therefore $R + 1\text{mm} \neq d$. The

Examiner is interpreting $R \geq d + 0.1\text{mm}$ as recited on page 13, lines 23-24 of the instant specification.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art in view of Matsubara et al (USPN 6617706; "Matsubara").

8. Regarding claims 1, 4-7 Applicant discloses in figure 10, the state of spark plug art is known to comprise a spark plug having a metal housing (not shown); a porcelain insulator (2) installed in the metal housing; a center electrode (3) retained within the porcelain insulator, the center electrode having a length and a tip portion (3a) projecting from a tip of the porcelain insulator, a shoulder (3b) formed on a side wall of the center electrode to define a large-diameter portion and a small-diameter portion of the center electrode, the shoulder tapering off to the tip portion of the center electrode and having a boundary leading to the large-diameter portion located inside the porcelain insulator; a first ground electrode (4) installed on the metal housing which has an end portion opposed to the tip portion of the center electrode to define a first spark gap therebetween; a second ground electrode (5) installed on the metal housing which has an end arranged outside the tip of the porcelain insulator and opposed over the tip of the porcelain insulator to a portion of the side wall of the center electrode.

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9. Applicant fails to show the prior art comprises the above spark plug with a wear resisting member provided on the portion of the side wall of the center electrode.

10. However, Matsubara teaches in figure 21 that a chip (24) which has a wear resisting member (platinum alloy, which has a higher melting point than Ni alloy) on the entire periphery portion of the side wall may be attached to the end of the center electrode, which has a surface substantially lying flush with a surface of the side wall of the center electrode, and this configuration is easier to manufacture than the spark plug chip of the prior art, and provides optimum performance and excellent spark wear.¹

11. Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the spark plug of Applicant's recited prior art with Matsubara's chip, to reduce manufacturing time while allowing for excellent spark wear and optimum performance.

12. The Examiner notes that the limitations in claim 1, "electrode to define a second spark gap in which sparks are to be generated to burn away carbon adhered to a surface of the tip of said porcelain insulator, resulting in a decrease in insulation resistance offered by said porcelain insulator;" and, "for offering resistance to wear caused by the sparks generated in the second spark gap," are intended use type limitations. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

¹ Matsubara, col. 18, ll. 22-40.

13. Regarding claim 2, Applicant's admitted prior art is silent to a wear resisting member.

14. However, Matsubara shows in figure 21, the wear resisting member is located at least inside the circle made by $R (d + 1\text{mm})$.² The reason for combining is the same as in numbered paragraph 11.

15. Regarding claim 3, Applicant's admitted prior art is silent to a wear resisting member.

16. However, Matsubara shows in figure 3, the wear resisting member has a width (A) which is opposed to the center electrode and greater than or equal to 0.5mm.³ The reason for combining is the same as in numbered paragraph 11.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Macchiarolo whose telephone number is (571) 272-2375. The examiner can normally be reached on 8:30 - 5:00, M-F.

19. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on (571) 272-2475. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

20. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

² Matsubara, col. 5, ll. 21-26.

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may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


pjm

March 6/24/04
Marluli Santiago
AU 2879

³ Matsubara, col. 9, ll. 28-47.